

WHAT IS CLAIMED IS:

1. A projection system comprising:

an adjusting part which adjusts the divergence angle or etendue of light emitted from a light source;

a scrolling part which scrolls a plurality of color bars on a light valve; and

a color separating part which separates an incident beam emitted from the light source and transmitted by the scrolling part into a plurality of color beams,

wherein the adjusting part, the scrolling part, and the color separating part are sequentially arranged from the light source.

2. The projection system of claim 1, wherein:

the scrolling part includes a scrolling unit, including at least one lens cell which converts a rotation of the scrolling unit into a rectilinear motion of an area of the lens cell on which light is incident; and

a plurality of color bars focused on the light valve are scrolled according to the rotation of the scrolling unit.

3. The projection system of claim 2, wherein the color separating part includes a color separator, including a plurality of dichroic filters which are disposed parallel to each other, and which each reflect a beam in a specific wavelength range of the light transmitted by the scrolling unit and transmit beams in all other wavelength ranges.

4. The projection system of claim 1, wherein light directing toward the adjusting part is diverged after being focused or converged, and the adjusting part is located at or around the point where incident light is focused.

5. The projection system of claim 4, wherein the adjusting part is a spatial filter having a slit.

6. The projection system of claim 4, further comprising a collimating lens which collimates light transmitted by the adjusting part to form approximately parallel light.

7. The projection system of claim 1, wherein the adjusting part is a spatial filter having a slit.

8. The projection system of claim 2, wherein the at least one lens cell is spirally arranged on the scrolling unit.

9. The projection system of claim 8, wherein the lens cell of the scrolling unit is a cylindrical lens.

10. The projection system of claim 8, wherein the scrolling unit is a disk.

11. The projection system of claim 2, further comprising first and second fly-eye lenses, disposed between the scrolling unit and the light valve, which each include lens cells matched with the lens cells of the scrolling unit in a one-to-one correspondence and each transmit light from the scrolling unit to the light valve.

12. The projection system of claim 11, further comprising a relay lens which is disposed between the second fly-eye lens and the light valve and which transmits light transmitted by the second fly-eye lens such that beams of different colors are focused on different locations on the light valve.

13. The projection system of claim 2, further comprising a plurality of cylindrical lenses which are disposed in front of and behind the scrolling unit so as to adjust the width of light incident on the scrolling unit.

14. A projection system comprising:
an adjusting part which adjusts the divergence angle of light emitted from a light source;
a color separating part which comprises a plurality of dichroic filters each of which reflects a beam in a specific wavelength range, thereby separating an incident beam into a plurality of color beams; and
a scrolling unit, comprising at least one lens cell, which converts a rotation of the scrolling unit into a rectilinear motion of an area of the lens cell through which light passes such that a plurality of color bars focused on the light valve are scrolled as the scrolling unit rotates,
wherein the adjusting part, the scrolling part, and the color separating part are sequentially arranged from the light source.

15. The projection system of claim 14, wherein the color separating part comprises a plurality of dichroic filters, disposed at different angles with respect to each other.

16. The projection system of claim 14, wherein the color separating part comprises an optical pipe comprising a plurality of prisms, each of which includes a dichroic filter which reflects light of a specific color.

17. The projection system of claim 14, wherein light directing toward the adjusting part is diverged after being focused or converged, and the adjusting part is located at or around the point where incident light is focused.

18. The projection system of claim 17, wherein the adjusting part is a spatial filter having a slit.

19. The projection system of claim 17, further comprising a collimating lens which collimates light transmitted by the adjusting part to transmit approximately parallel light.

20. The projection system of claim 14, wherein the adjusting part is a spatial filter having a slit.

21. The projection system of claim 14, wherein the at least one lens cell is spirally arranged on the scrolling unit.

22. The projection system of claim 21, wherein the lens cell of the scrolling unit is a cylindrical lens.

23. The projection system of claim 21, wherein the scrolling unit is a disk.

24. The projection system of claim 21, further comprising first and second fly-eye lenses, disposed between the scrolling unit and the light valve, which each include lens cells matched with the lens cells of the scrolling unit in a one-to-one correspondence and each transmit light from the scrolling unit to the light valve.

25. The projection system of claim 24, further comprising a relay lens, disposed between the second fly-eye lens and the light valve, which transmits light from the second fly-eye lens so that beams of different colors are focused on different locations on the light valve.

26. The projection system of claim 14, further comprising a plurality of cylindrical lenses, disposed in front of and behind the scrolling unit so as to adjust the width of a beam incident upon the scrolling unit.